PLUME ACADEMY - LEARNING OVERVIEW

Year	10
Course	Cambridge National in Engineering Manufacture
Specification Number/Exam Board	J842 OCR Level 1/2 Cambridge National Certificate in Engineering Manufacture
End of course assessment and weightings	25% of the grade comes from a 1 hour exam, 75% of the grade comes from 3 centre assessed tasks

Prior Learning

The subject builds on your child's key stage 3 experience in Year 9 engineering by developing their skills and knowledge much further through a variety of design and make projects and theory lessons.

Curriculum Intent – What are the curriculum aims?

Engineering manufacture is a discipline of engineering dealing with different manufacturing practices and processes using machines, tools and equipment that turn raw materials to new products.
The Cambridge Nationals in Engineering Manufacture is aimed at learners who wish to study the processes involved in manufacturing new engineered products. Learners are provided with the knowledge and skills required to operate manufacturing tools and equipment used to make products from the requirements of a design specification. Learners will develop their understanding of the processes and systems required to transfer a design concept into a product. A practical approach to teaching and learning will provide learners with knowledge in engineering technology and develop critical thinking, creativity and dexterous skills through engaging practical experiences.

Curriculum Implementation – What will my child will be learning?

Term 1	R109 Engineering materials, processes and production	Learning Outcome 1: Know about properties and uses of engineering materials Learning Outcome 2: Understand engineering processes and their application **Nutcracker project**
	R110 Preparing and planning for manufacture	Learning Outcome 1: Be able to plan for the making of a pre-production product
Term 2	R109 Engineering materials, processes and production	Learning Outcome 2: Understand engineering processes and their application Learning Outcome 3: Know about developments in engineering processes

	R110 Preparing and planning for manufacture	Learning Outcome 2: Be able to use processes, tools and equipment safely to make a pre-production product **Oscillating Engine Project**
Term 3	R109 Engineering materials, processes and production	Learning Outcome 3: Know about developments in engineering processes Learning Outcome 4: Understand the impact of modern technologies on engineering production **1 hour externally assessed exam**
	R110 Preparing and planning for manufacture	Learning Outcome 3: Be able to modify a production plan for different scales of production **10-12 hour centre assessed task**

Curriculum Impact – How will progress be assessed as I learn?

Students will use the OneDrive to access resources and store their completed portfolio work for R109. This allows that teacher to monitor their work and provide feedback. In R110 practical lessons there will be a lot of verbal feedback as students complete their practical work, aiming to meet tolerances on each component they produce. Each Unit is worth 25% of the overall grade. R109 will be assessed by a one-hour exam in the Summer Term of Year 10. There will be an opportunity for students to re-sit this in Year 11 if they fail to achieve their MEG. R110 is a centre assessed task set by OCR; students have approximately 10-12 hours of curriculum time to complete this in the Summer of Year 10

Super-Curricular Opportunities – Support and Extending Learning

Useful study resources	**If a student is really passionate about this subject...**	**As a parent/carer, I can assist my child in this subject by:**
Download and install a copy of Autodesk Fusion 360 at home. Make sure it is the free educational version! BBC Bitesize www.technologystudent.com	Develop their engineering skills at home; being creative and designing and making anything, possibly with older siblings or relatives.	Encouraging students to watch engineering related, or visit places of interest with an Engineering connection, e.g. The Science Museum, The Museum of Power, IWM Duxford.